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PATENT
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Assistant Commissioner for Patents
Washington, D.C. 20231

On March 19, 2001

TOWNSEND and TOWNSEND and CREW LLP

By: Joy M. Marshall

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Fischer *et. al.*

Application No.: Attached herewith

Filed: March 19, 2001

For: NUCLEIC ACIDS THAT
CONTROL SEED AND FRUIT
DEVELOPMENT IN PLANTS

Examiner: Not yet assigned

Art Unit: Not yet assigned

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

The application accompanying this Amendment is a continuation of U.S. Patent Application No. 09/177,249, under examination of Examiner A. Mehta of Art Unit 1638. Prior to examination of the above-referenced application, please enter the following amendments and remarks.

IN THE CLAIMS:

Please cancel claims 3 and 16.

Please amend claims 1, 2, 6, 8, 9, 11, 14, 15, 17 and 19 as follows.

Please add claims 22-24 as follows.

1. (Amended) An isolated double-stranded nucleic acid molecule comprising a *FIE* polynucleotide encoding a polypeptide at least 60% identical to SEQ ID NO:4.

2. (Amended) The isolated nucleic acid molecule of claim 1, wherein the *FIE* polynucleotide is at least about 100 nucleotides in length.

6. (Amended) The isolated nucleic acid molecule of claim 5, wherein the plant promoter is from a *FIE3* gene.

8. (Amended) The isolated nucleic acid molecule of claim 1, wherein the polypeptide is SEQ ID NO:4.

9. (Amended) A transgenic plant comprising an expression cassette containing a plant promoter operably linked to the polynucleotide of claim 1, wherein the polynucleotide is heterologous to the plant promoter or the plant.

11. (Amended) The transgenic plant of claim 10, wherein the polypeptide is as shown in SEQ ID NO:4.

14. (Amended) The transgenic plant of claim 13, wherein the *FIE* gene is as shown in SEQ ID NO:3.

15. (Amended) A method of modulating endosperm development in a plant, the method comprising introducing into the plant an expression cassette containing a plant promoter operably linked to the polynucleotide of claim 1, wherein the polynucleotide is heterologous to the plant promoter or the plant.

17. (Amended) The method of claim 15, wherein the polypeptide has an amino acid sequence as shown in SEQ ID NO:4.

19. (Amended) The method of claim 15, wherein the heterologous *FIE* polynucleotide is SEQ ID NO:3.

22. (New) The isolated nucleic acid molecule of claim 1, wherein the polypeptide is at least 80% identical to SEQ ID NO:4.

23. (New) The transgenic plant of claim 9, wherein the polypeptide is at least 80% identical to SEQ ID NO:4.

24. (New) The method of claim 15, wherein the polypeptide is at least 80% identical to SEQ ID NO:4.

REMARKS

1. Status of the Claims

In this Amendment, claims are 1, 2, 6, 8, 9, 11, 14, 15, 17 and 19 are amended and claims 22-24 are added. In addition, claims 3 and 16 are canceled. Therefore claims 1-2, 4-15 and 17-24 are pending and under consideration with entry of this Amendment.

A marked up copy of amended claims 1, 6, 8, 9, 11, 14, 15, 17 and 19 is provided as an appendix entitled "**MARKED UP COPY OF CLAIMS.**" As a convenience to the Examiner, a complete set of the claims, as amended herein, is also attached to this Amendment as an appendix.

2. Support for the Amendments

Support for the amendments to the claims can be found throughout the specification, the drawings, and the claims as originally drafted. Support for claims 1 and 22-24 can be found, e.g., on page 5, lines 20-23 of the specification. Support for claims 9 and 15 can be found, e.g., on page 3, lines 13-18. No new matter is introduced by this Amendment.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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MARKED UP COPY OF CLAIMS

1. (Amended) An isolated double-stranded nucleic acid molecule comprising a *FIE* polynucleotide encoding a polypeptide at least 60% identical to SEQ ID NO:4 [sequence, which polynucleotide sequence specifically hybridizes to SEQ ID NO:1 or SEQ ID NO:3 under stringent conditions].

2. (Amended) The isolated nucleic acid molecule of claim 1, wherein the *FIE* polynucleotide is [about] at least about 100 nucleotides in length.

6. (Amended) The isolated nucleic acid molecule of claim 5, wherein the plant promoter is from a [*FIE1*] *FIE3* gene.

8. (Amended) The [An] isolated nucleic acid molecule of claim 1, wherein the polypeptide is SEQ ID NO:4 [comprising a *FIE* polynucleotide sequence, which polynucleotide sequence encodes a polypeptide as shown in SEQ ID NO:2 or SEQ ID NO:4].

9. (Amended) A [a] transgenic plant comprising an expression cassette containing a plant promoter operably linked to the polynucleotide of claim 1, wherein the polynucleotide is heterologous to the plant promoter or the plant [a heterologous *FIE* polynucleotide of claim 1].

11. (Amended) The transgenic plant of claim 10, wherein the [FIE] polypeptide is as shown in [SEQ ID NO:2 or] SEQ ID NO:4.

14. (Amended) The transgenic plant of claim 13, wherein the *FIE* gene is as shown in [SEQ ID NO:1 or] SEQ ID NO:3.

15. (Amended) A method of modulating endosperm development in a plant, the method comprising introducing into the plant an expression cassette containing a plant promoter operably linked to the polynucleotide of claim 1, wherein the polynucleotide is heterologous to the plant promoter or the plant [a heterologous *FIE* polynucleotide].

17. (Amended) The method of claim 15 [16], wherein the [FIE] polypeptide has an amino acid sequence as shown in [SEQ ID NO:2 or] SEQ ID NO:4.

19. (Amended) The method of claim 15, wherein the heterologous FIE polynucleotide is [SEQ ID NO:1 or] SEQ ID NO:3.

Appendix

Pending Claims With Entry Of Amendment

1. An isolated double-stranded nucleic acid molecule comprising a *FIE* polynucleotide encoding a polypeptide at least 60% identical to SEQ ID NO:4.
2. The isolated nucleic acid molecule of claim 1, wherein the *FIE* polynucleotide is at least about 100 nucleotides in length.
4. The isolated nucleic acid molecule of claim 1, wherein the *FIE* polynucleotide is SEQ ID NO:3.
5. The isolated nucleic acid molecule of claim 1, further comprising a plant promoter operably linked to the *FIE* polynucleotide.
6. The isolated nucleic acid molecule of claim 5, wherein the plant promoter is from a *FIE3* gene.
7. The isolated nucleic acid of claim 6, wherein the *FIE* polynucleotide is linked to the promoter in an antisense orientation.
8. The isolated nucleic acid molecule of claim 1, wherein the polypeptide is SEQ ID NO:4.
9. A transgenic plant comprising an expression cassette containing a plant promoter operably linked to the polynucleotide of claim 1, wherein the polynucleotide is heterologous to the plant promoter or the plant.
10. The transgenic plant of claim 9, wherein the heterologous *FIE* polynucleotide encodes a FIE polypeptide.
11. The transgenic plant of claim 10, wherein the polypeptide is as shown in SEQ ID NO:4.

12. The transgenic plant of claim 9, wherein the heterologous *FIE* polynucleotide is linked to the promoter in an antisense orientation.
13. The transgenic plant of claim 9, wherein the plant promoter is from a *FIE* gene.
14. The transgenic plant of claim 13, wherein the *FIE* gene is as shown in SEQ ID NO:3.
15. A method of modulating endosperm development in a plant, the method comprising introducing into the plant an expression cassette containing a plant promoter operably linked to the polynucleotide of claim 1, wherein the polynucleotide is heterologous to the plant promoter or the plant.
17. The method of claim 15, wherein the polypeptide has an amino acid sequence as shown in SEQ ID NO:4.
18. The method of claim 15, wherein the heterologous *FIE* polynucleotide is linked to the promoter in an antisense orientation.
19. The method of claim 15, wherein the heterologous *FIE* polynucleotide is SEQ ID NO:3.
20. The method of claim 15, wherein the plant promoter is from a *FIE* gene.
21. The method of claim 15, wherein the expression cassette is introduced into the plant through a sexual cross.
22. The isolated nucleic acid molecule of claim 1, wherein the polypeptide is at least 80% identical to SEQ ID NO:4.
23. The transgenic plant of claim 9, wherein the polypeptide is at least 80% identical to SEQ ID NO:4.

24. The method of claim 15, wherein the polypeptide is at least 80% identical to SEQ ID NO:4.

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